

Technical Specifications
of
DC Energy Meter
(SPDC401)



Class 1.0S

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General Specifications

1) **GENERAL:**

- Universal Auxiliary Supply (85 – 265 VAC)
- Data can be stored using application software via RS485 or **Memory Card (Optional)**
- Voltage full scale programmable using RS485 (MODSCAN)
- Current full scale programmable independently
- Password Protected and it is editable,
- Displays instantaneous Volts & Amps
- Voltage Input (150VDC (default) & Factory adjustable) and Shunt Current Input (75mV)

2) **METER FEATURES:**

2.1) **Display Details:**

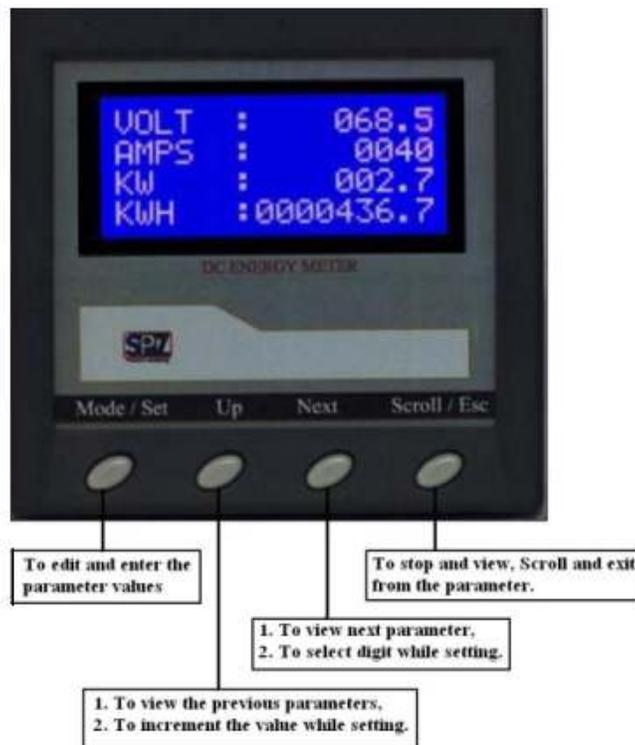
- Liquid Crystal Display (4*16 Blue with White Character) – The parameters are calculated by the meter are displayed,
- Selectable Parameters – Can select any parameters.
- Scroll rate – The scroll rate of the display parameter scroll in steps of 4secs.
- Keys are provided to stop, scroll, edit and to view the particular parameter.

2.1.1) **Display Parameters:**

- RTC
- Meter ID
- Voltage (CH1)
- Current (CH1)
- Power, kW (CH1)
- Energy, kWh (CH1)
- Voltage (CH2)
- Current (CH2)
- Power, kW (CH2)
- Energy, kWh (CH2)
- Voltage (CH3)
- Current (CH3)
- Power, kW (CH3)
- Energy, kWh (CH3)
- Voltage (CH4)
- Current (CH4)
- Power, kW (CH4)
- Energy, kWh (CH4)

2.2) Key Features:

- The Parameter setup can be done through 4 nos. of soft keys on front fascia,
- Keys on the front panel is used to
 - ✓ scroll, increment, decrement through display parameter and
 - ✓ set the Meter ID,
 - ✓ CT Primary values,
 - ✓ Time & Date,
 - ✓ Energy Reset (CH1 / CH2 / CH3 / CH4),
 - ✓ Change Password.
- Press scroll key once the parameter set is completed, this allows to view the parameters one after the other automatically (change over time period is 4 secs). If this is not done auto scroll will not happen.



Key features description:-

2.6) Rear Terminal Details:

+	-	+	-	+	-	+	-
CH1		CH2		CH3		CH4	
CURRENT INPUT (0-75 mV from DC Shunt)							
Manufactured by  Sai PowerZerve Chennai, India. www.spowerz.com				RS485 D+ D-			
Meter Name: 4 CH DC Energy Meter							
Model : SPDC401							
Serial No. :							
Volt Input (0-150V DC)							
CH1	CH2	CH3	CH4	Com.	AUX 85-265V AC		
+	+	+	+	-	L	N	

2.3) Set Parameters:

- Meter ID,
- Time and Date,
- Input Amps (CH1 / CH2 / CH3 / CH4)
- User Password.
- Energy Reset (CH1 / CH2 / CH3 / CH4)

2.4) Communication:

2.4.1) Communication Interface:

- Through RS485 Communication with MODBUS RTU,
- Baud Rate : 9600
- Power Line Communication using Power Line Node and Concentrator.
- Memory Card (Optional)

Note:

- (i) Field Programmability of the meter is optional based on the customer requirement,
- (ii) Each meter is given a unique number at the factor

2.5) Enabling Auto scroll / Manual Scroll :

2.5.1) *Enabling Manual scroll*: Press **Stop/Scroll** key to enable manual scroll mode. Now parameters can be viewed one by one using **Up** and **Next** Keys

2.5.2) *Enabling Auto scroll* : When display in manual mode, press **Stop/Scroll** to enter into auto scroll mode. Parameters will scroll 4 secs. one after the other. By default, when meter is switched it will be in auto scroll mode.

2.5) Safety Precautions:

HAZARD OF ELECTRIC SHOCK, EXPLOSION, OR ARC FLASH

- Apply appropriate personal protective equipment (PPE) and follow safe electrical work practices.
- Only qualified electrical workers should install this equipment. Such work should be performed only after reading this entire set of instructions.
- If the equipment is not used in a manner specified by the manufacturer, the protection provided by the equipment may be impaired.
- NEVER work alone.
- Before performing visual inspections, tests, or maintenance on this equipment, disconnect all sources of electric power.
- Assume that all circuits are live until they have been completely de-energized, tested, and tagged.
- Pay particular attention to the design of the DC power system.
- Consider all sources of power, including the possibility of back feeding.
- Turn off all power supplying the dc energy meter and the equipment in which it is installed before working on it.
- Always use a properly rated voltage sensing device to confirm that all power is off.
- Before closing all covers and doors, inspect the work area for tools and objects that may have been left inside the equipment.
- The successful operation of this equipment depends upon proper handling, installation, and operation.
- Neglecting fundamental installation requirements may lead to personal injury as well as damage to electrical equipment or other property.
- High voltage testing may damage electronic components contained in the dc energy meter.
- Ensure that no wiring strands are straying outside after connecting the wires.
- DC Energy Meter should be installed in a suitable electrical enclosure.

Failure to follow these instructions will result in death or serious injury

Technical Specifications

Accuracy	: Class 1.0S
System type	: DC Input Voltage (Default 150VDC) (CH1/CH2/CH3/CH4)
Resolution	: 0.1 (for Kwh, Voltage)
Display	: 4x16 LCD (Blue with White Character)
Auxiliary Supply	: 85 – 265 V _{AC}
DC Current	: Primary side – Programmable (1A – 5000A)
Starting Current	: 10mA
Frequency	: 50Hz, ±5%
Communication	: RS485 Communication with MODBUS RTU / Memory Card (Optional)
Temperature	: Operating Temp. – (-10 to 55)°C Storage Temp. – (-20 to 70)°C Humidity 5 to 95% RH at 50°C (Non-Condensing)
Dimension	: (96 x 96 x 48) mm (Inclusive of connector)
Panel Cutout	: 92 x 92 mm (-0.5mm)
Mounting	: Panel Mountable
Connector Type	: Screw type terminals (U Lug 2.5mm)
Weight	: 350gms. (app.)